DOCUMENT RESUME

ED 305 941 IR 052 731

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TITLE The Independent Information Provider as Entrepreneur.
PUB DATE 88
NOTE 33p.
PUB TYPE Information Analyses (070)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Entrepreneurship; Futures (of Society); History; *Information Needs; *Information Scientists; Information Sources; *Marketing; *Social Influences; *Users (Information)
IDENTIFIERS *Privatization

ABSTRACT

Arguing that entrepreneurship in information provision and the use of information resources and ideas for strategic advantage are major impacts of a maturing information society, this paper begins by reviewing the history of the knowledge industries (education, research and development, communications, media, information machinery, and information activities); the post-industrial society; the information economy (primary and secondary sectors); societal trends (service economy; information as a resource, a factor of production, and a commodity; and scientific discovery and technological innovation); and the social impact of the information-based society. Eight additional topics are then addressed: (1) information as a commodity; (2) marketing and the trend toward privatization of information; (3) user needs in a marketing context--how information is made available to the user/consumer; (4) fee-based versus free information services--the public-private sector competition; (5) the new intermediary role--information brokers, consultants, counselors; (6) types of fee-based information services; (7) a brief history of four decades of fee-based information services; and (8) end user online searching versus the intermediary role. (25 references) (CGD)

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# THE INDEPENDENT INFORMATION PROVIDER AS ENTREPRENEUR

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IR052731

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# THE INFORMATION SOCIETY

Entrepreneurship in information provision and the use of information resources and ideas for strategic advantage is one of the major impacts caused by a maturing information economy [1]. The transition of the industrial society (based on machine-technology) to a post-industrial society (based on information and knowledge) was evident particularly in Western Europe and the United States in the early 1960s [2].

## Knowledge Industries

In 1962, economist Fritz Manchlup first attempted to measure the share and growth of "knowledge industries" (education, research and development, communications, media, information machinery, and information activities [3]. The results of the measuring revealed that the knowledge industries accounted for approximately 29% of the GNP - Gross National Product - for

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[1] Donald Marchand and Forest W. Horton Jr. Infotrends. New York: John Wiley & Sons, 1986, p.24.

[2] Note that the scope of this review is on maturing information economies. The question of how do information-poor countries react to this transition is controversial and not the purpose of this study. However, it is important to note that information-poor countries are, in one way or another, influenced by information-rich countries, even in the constraints of historical differences and contrasting cultural realities.

[3] Fritz Manchlup. THe Production and Distribution of Knowledge in the United States. Princeton: Princeton University Press, 1962.

the year 1958 [4].

## Post-industrial society

Later, in 1973 Harvard sociologist, Daniel Bell introduced the concept of the post-industrial society. He presented a framework of social change identifying three historical stages: Pre-industrial, Industrial and Post-industrial, emphasizing that information and knowledge constitute the major structural features of the post-industrial society, replacing capital and labor , basis of the antecedent industrial society. [5]

Referring to the impact of this transition in the work force, Bell stated that a post-industrial society is based on services. "What counts is not raw muscle power, or energy, but information" [6]

## The Information economy

Marc Porat supported Manchlup and Bell in 1977 with the report The Information Economy , published by the U.S. Department of Commerce. The study's goals were: "to define and measure an 'information activity' in the U.S. economy; ... to examine the

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[4] Marchand, p.3

[5] Daniel Bell. The coming of Post-Industrial Society: A Venture in SOcial Forecasting. New York: Basic Books, Inc. Publishers, 1976, p...

[6] Bell, p.127

structure of the information activity with respect to the rest of the economy; and to discuss the implications of the findings." [7] Porat identified two main sectors of the information economy: (1) The primary information sector, which includes those who generate and sell information and those who produce information technology; and (2) The secondary information sector, comprised by information services and products used by any organizations for its own internal purposes. [8]

The report findings included that more than 46% of the GNP and 53% of labor income was accounted for through knowledge, communication, and information work, providing substantial evidence for the reality of the information economy in the United States.[9]

## Societal Trends

Today's trends are: (a) Emphasis is on a service economy rather than on manufacturing; (b) Information is used as a resource, as a factor of production, and as a commodity; and (c) Both, scientific discovery (science push) and technological innovation (technology or market pull), which are driving forces

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[7] Marc Uri Porat. The Information Economy. Washington DC: Government Printing Office, 1977, p. 1

[8] U.S. Congress. Office of Technology Assessment (OTA). Computer-Based National Information Systems: Technology and Public Policy Issues. Washington D.C.:Government Printing Office, September 1981, p 51.

[9] Marchand, p.7

of the economy.[10]

Marc Porat and Fritz Manchlup estimated that during the 1980s, the information industry will be the largest sector of the American economy. [See Figure 1]. Contemporary economists confirmed this trend and are modifying economic models to incorporate information as a commodity or factor of production.[11]

## Social impact of the information-based society

Finally, sociologists are concerned with the social impact of the information economy. "It appears that the major theme is a need for increased access to information as a fundamental requirement of successful societal adaptation to change in the next two decades...Users will need protection from the potential abuses of an information-based society--distortion or manipulation of information, fraud, violations of privacy, information overload, and exploitation of the information-poor by the information-rich".[12]

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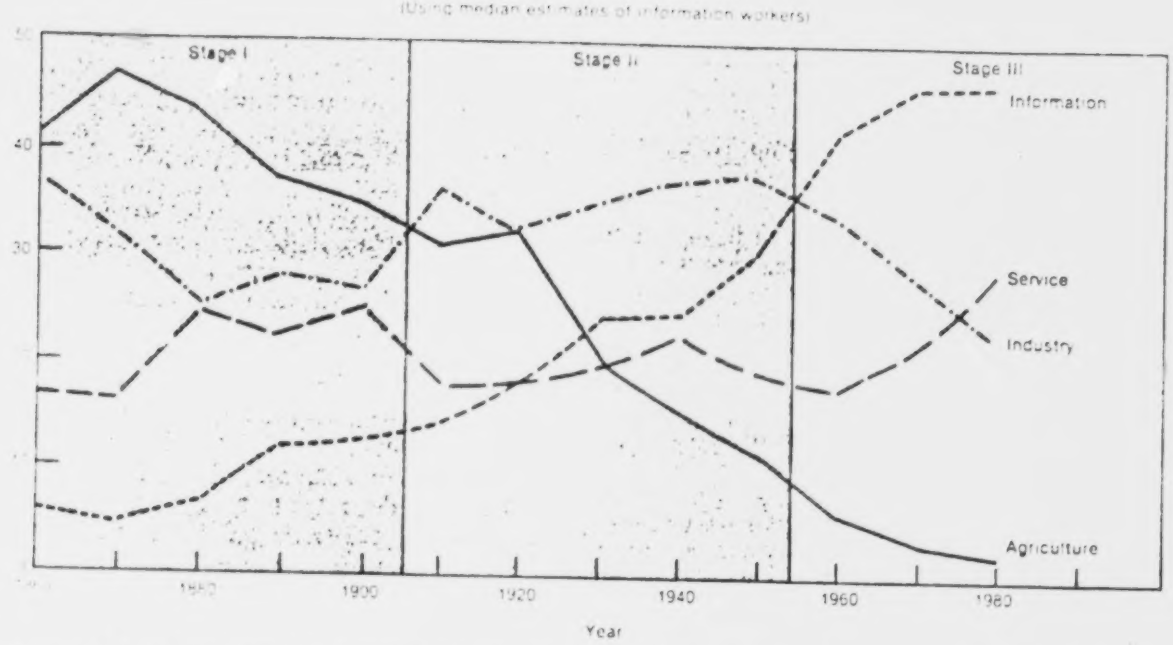
[10] OTA, p. 47

[11] OTA, p. 52

[12] Burt Nanus. "User Needs for Information in the Year 2000" in Marta Boaz ed. Strategies for Meeting the Information Needs of Society in the Year 2000. Litleton, CO: Libraries Unlimited, 1981, p. 63.

Figure 1 - Four Sector Aggregation of the U.S. Work Force by Percent, 1860-1980




Marc U. Porat, The Information Economy, Stanford University Institute for Communication Research, report no. 27, vol. 1, p. 164, August 1976. See ch. 4 for



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# INFORMATION AS A COMMODITY

"Information is no longer perceived as a pure public good to be nurtured and shared by all; it is now thought of in political and economic terms, as a commodity to be owned, bought, sold and traded for political gain".
[Jean Smith, in **Special Libraries**, Oct. [1984]

Anthony Debons, information science researcher at the University of Pittsburgh, states that "Whereas information may be a cognitive process, in some instances it is undoubtedly a marketable product... a commodity which can be understood in terms of the laws which characterize economics [DEBONS,1975] [13]. The economic value of information have become more evident under the influence of new information technology.

## Commercial, private and public value of information

There are three basic values of information: commercial value, private value, and public value [14]. [See Figure 2].

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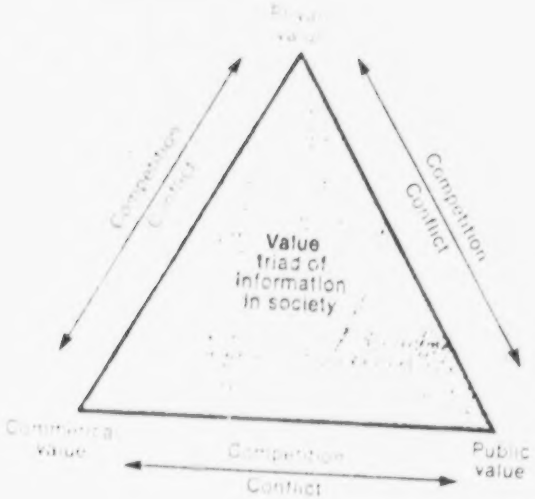
[13] NATO Advanced Study Institute on Perspectives in Information Science. Leyden:Noordhoff, 1975. p.14

[14] OTA, p.15

Figure 2 - Value Triad of Information: Conflict and Competition Among Private, Commercial and Public Value



The commercial value of information deals with the selling and pricing of information. Some of the commercial characteristics are: a)It is reproducible, usually at low cost compared to original creations; b)It is transported worldwide over communication lines; c)Its lifetime (e.g. intellectual property of information is lifetime: its sharing does not imply its loosing); and d)Its value is not additive. These characteristics have contributed to raise some still unresolved policy issues, such as: computer crime, copyright and patents laws, international data flow, etc.[15]

The private value of information refers to individual right to have access to information about him/herself recorded in a federal governmental file or database (with the exceptions listed in the Privacy Law of 1974) [16]; and the right to correct mistakes and to prevent the release of individual information without the person's consent.

The public value of information is based on the assumption that citizens have the right to access information, specially personal and proprietary information. The growth of the economic

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[15] OTA, p.49

[16] See **Privacy Act of 1974 (Public Law 93-579)** for enacted legislation on privacy

value of information, and freedom of information laws have generated conflicts over the equitable, and free access of information, and rights to privacy.

Conflict and competition among these values are continuing to generate tensions among information providers and users, and also among information professionals, who strive to find their role in a competitive information society. Moreover, information producers in the governmental and the commercial sector are competing with each other (e.g. public library information services vs. fee-based information services). An approach to the role of the information professionals states that the information professional should be the "result of society's needs combined with individual inventiveness" [17]. Later in this study, we will be reviewing in more detail emerging roles of the information professional.

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[17] Marta L. Dosa "Education for New Professional Roles in the Information Society" In ..... Elsevier Science Publishers B.V. (North-Holland), 1985, p...

## MARKETING OF INFORMATION

"Scientific and technological information, together with economic, social and cultural information, constitutes a common asset of humanity"
[UNISIST II, Final Report, UNESCO, Paris 1950]

"The concepts of information economics have changed dramatically over the past two decades. Instead of being viewed as a public good, freely offered to all, information is now being viewed more as a commodity..."
[Robert Mason, 1981]

### Information: Humankind's Heritage?

Two decades ago, the issue of the marketability of information was not a popular as today. Information was traditionally viewed as a common asset of Humanity, to be equally share by any human being. But still, most of us have, in some degree, a feeling of the universality of knowledge and information. That "feeling" is probably based on the cultural dimension assigned to information: "Data are collected, organized and communicated as a consequence of needs which are created by culture and with tool which are cultural products" [18]

Some of the causes for the reexamination of the value and "ownership" of information are: a) The proliferation of information ; b) Information technology push (also known as: science push and technology or market pull); c) Innovations on

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[18] Michel J. Menou. "cultural barriers to the International Transfer of Information" . In Information Processing and Management. Vol 19, No3, p. 121

repackaging of information (e.g. use of videodisc); d) Government policies on public access to information.

The issue of whether information is a public or private good is recently being debated by those involved in the creation, collection, packaging, provision, retrieval and dissemination of information. Public libraries, for example, as traditional and institutionalized providers of free and equal access to information are alarmed by new policies perceived as a shrinking of governmental responsibility to inform its citizens. New policies include: cuts in library funds at the state and local level, higher cost of publications, privatization of existing databases, pricing policy of government-generated information, etc. [19]. The trend seems to be a growing privatization of information.

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[19] Jean Smith. "Information: Public or Private/". In Special Libraries. October 1984, pp.275-282.

**User Information Needs in a Marketing context.**

Marketing is an heterogenous and interdisciplinary field, which tends to convey the idea of hard-sell and hidden persuasion. One could approach the marketing of information as the result of a blend of marketing concepts (that is to say, information as a marketable product) and user needs (using the information-seeking behavior approach). It is in fact difficult to determine if there is really a difference among these two approaches. "To date , the most marketing-related documentation in these fields has been presented under such labels as user needs, user training, and the economics of information [20].

Literature is substantial in user needs, with early studies starting in the 1950s. The Marketing of Information has also a broad coverage by authors engaged in both: information science and technology research and marketing and economics research. However, there is scarce literature approaching and relating user needs and marketing needs in the information provision scope. Roughly speaking, both deal with the same objective: make information available to the user/consumer. They differ in the methods and means they use, but yet they share the common

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[20] James E. Freeman and Ruth M. Katz "Information Marketing" in Annual Review of Information Science and Technology. Vol 13, 1978, pp. 37-38. Note that this is the first chapter of the periodical cited above (ARIST) to attempt a general review of the subject.

objective of information provision.

**Information Needs**

According to FAIBISOFF & ELY [21], "information needs" is a generic concept with two subsets: information demands (or requirements) and information wants (or desires). "There are individuals who can articulate demands and there are those who have a desire for information but are not able to specify what is that they "needs" [22].

In reviewing relevant bibliography in user needs, FAIBISOFF & ELY proposed some generalizations about information needs, segmenting users into four main categories: scientists, social scientists, professionals and the general public; and grouping user information needs studies into four major groupings: (1) the behavior of the user; (2) the nature, amount and source of the information being sought; (3) the quality of information; and (4) the timeliness of the information.

Methodology to study user needs include: sociological techniques, population analysis, demands studies, statistical analysis, etc.

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[21] Sylvia G. Faibisoff & Donald P. Ely. "Information and Information Needs" in Information Reports and Bibliographies. Vol. 5, no. 5, 1976, pp. 270-284.

[22] Ibid, p. 271

**Marketing as a tool to satisfy human needs: A Definition**

KOTLER [1975] defines marketing as the applied social science concerned with the management of exchange relations among people who provide products or services and their current or potential clients.

"Marketing is the analysis, planning, implementation and control of carefully formulated programs designed to bring about voluntary exchanges of values with target markets for the purpose of achieving organizational objectives. It relies heavily on designing the organizations's offering in terms of the target market's needs and desires, and on using effective pricing, communication, and distribution to inform, motivate and service that market" [23].

In this sense, marketing is the concept of sensitively serving and satisfying human needs . Depending on the context, information suppliers should serve and satisfy the information needs of a given target market, which is determine by a number of variables: size, location, needs, interests, objectives, etc. These variables influence the way in which information is originated, formatted, packaged and delivered.

Extensive research is being done on the identification of user needs, which are getting more complex and diversified as a

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[23] Philip Kotler. Marketing for Nonprofit Organizations. Englewood Cliffs, NJ:Prentice-Hall, 1975, p...

result of the segmentation of markets, a strong trend for the next 20 years.

There is no standard answers for what are genuine human needs. Abraham Maslow's theory on personality and motivation suggests a hierarchy of human needs composed by: basic physiological needs, safety and security, belongingness and social relations, esteem of others and self-respect, achievement, knowledge and understanding and finally, beauty and aesthetics. [24]

In pursuit of the satisfaction of these needs, users perform information-seeking behaviors which involve all levels of Maslow's hierarchy. Other theories proclaim man as an information processing system, specially in problem-solving concerned with the fulfillment of his needs. [25]

In marketing, information needs are detected by market research -an strategic element for the placement and selling process of any good . Those identified needs, - desires, wants, or demands - are frequently controversial. There are those who believe that marketing, together with advertising techniques,

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[24] A.H. Maslow. Motivations and Personality. New York:Harper, 1954, pp.80-85

[25] Allen Newel and Herbert Simon. Human Problem Solving. Englewood Cliffs, NJ:Prentice-Hall, 1972, p.9

"create", "built" or push users or consumer's needs for the sake of consumism. Pro-marketers argue that individual and social needs can not be create by such manipulatory techniques, but bring about, awaken. In this sense, it is the consumer/user the one who holds the right to decide in whether or not consume/use.

**Pricing Information**

Traditionally, libraries have provided free information services, but the advent of commercial computer-based data banks, and other information services (such as information brokering, information consulting, information counseling, free-lance librarians) have brought up the issue of pricing. Conflicting opinions generated what is called the "fees controversy" [26].

In one hand, fees advocates sustain the economic value of information, seen as a product which is bought, sold, traded, exchanged and consumed in commercial terms. Harry Kibirige [1983] summarizes the arguments for charging fees for information as follows:

1. The tradition of selling services to those who can pay is part of the American culture.
2. Subscription libraries as well as rental collections are well know features in American library history.
3. Users pay for other public utilities, like bridges, highways, museums and parks.
4. Fees will allow development of special services which

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[26] Harry M. Kibirige. The Information Dilemma. Westport, CN:Greenwood Press, 1983, pp 93-97

would not otherwise be provided, like on-line bibliographic searches.

5. Users do not seriously object to charges for services which are vital to them.

6. If fees are not collected, some of the costly services would be abused and thus become a drain on the budget [27].

In the other hand, critics who are against fees sustained that "information is a pure public good, [thus] there can be no direct pricing either possible or desirable" [28]. Arguments against charging fees for information include:

1. That the American tradition of free library services is damaged by charging fees.

2. Users are double charged, first by taxes for running public services and then by charges for special services.

3. Before one can charge one must have a sound basis for charging It is argued that methods of evaluating information are still primitive. [29]

4. Charging fees causes inequalities vis-a-vis the users, for only those who can pay may use special services. This negates the equal access to education ethics.

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[27] Kibirige, pp. 96-97

[28] ADJ Flowerdew, CM Oldman and CME Whitehead. The Pricing and Provision of Information. West Yorkshire:The British Library Board of 1984, 1984, p.7

[29] Some economic models for setting user fees emphasize profit maximization and others concentrate on user's benefit. Demand-based pricing and competition-based pricing have also being suggested.

5. Acquisition of material will begin to be geared to those who can pay.[30]

In the Information Age, the value of information as a survival tool is increasing and society should have an obligation to provide information for all. Information pricing and the fees controversy tend to threaten ample user access to information. Information entrepreneurs have an important part in this controversy, as we will see later on this study. [31]

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[30] Kibirige, p. 96

[31] Kibirige, pp. 101-102

## FEE-BASED INFORMATION SERVICES

### The Information Industry

The information processing industry can be classified into four major subsectors: the computer industry, the communications industry, the information industry and the knowledge sector.[32] [See Figure 3]

Within the parameters of this discussion, we focus in the information industry sector, identifying two broad areas: manufacturing and services. In the manufacturing area we have: primary information producers and secondary information producers; and in the services area: computer-based services, information retailing, on-line distributors, support services and seminars & conferences.[33]

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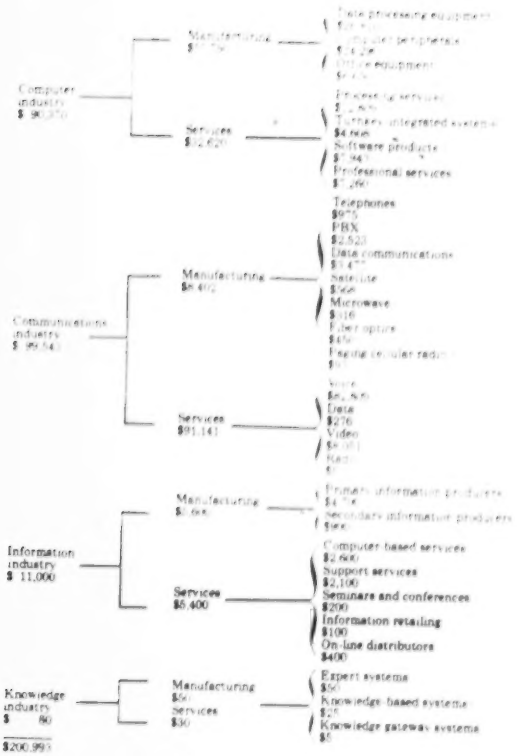
[32] Donald A. Marchand and Forest W. Horton, Jr. Infotrends. New York: John Wiley & Sons, 1986, pp. 27-54

[33] Batty-Carol Sellen and Dimity S. Berkner. New Options for librarians. New York: Neal Schuman Publishers, Inc., 1984, pp.103

Figure 3 - The Information Processing Industry




Source: Donald Marchand & Forest Horton, Jr.
Infotrends. New York: John Wiley & Sons, 1986, p.30



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Both, free and fee-based services exist within the information industry, using the same basic information sources,[34] computer-mediated data processing and other technologies but in different degrees and for diverse purposes.

**Fee-based versus free information services?**

The main difference between the two relies on what is know as the "fees-controversy" ( the charging of a fee for information provision) and the for-profit and non-profit organizational settings.

The literature indicates that the advent of fee-based information services had social implications regarding the public [and free] access to information. "In June 1977, the **Social Responsibilities Round Table** of the American Library Association presented a resolution to the Association membership which says, in part:

> It shall be the policy of the American Library Association to assert that the charging of fees and levies for information services, including those services utilizing the latest information technology is discriminatory in publicly supported institutions providing library and

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[34] We refer to basic information sources in all its three levels: primary information sources (monographs, articles, reports, papers, dissertations, etc.), secondary information sources (indexes, abstracts, online databases, etc.) and tertiary information sources (encyclopedias, manuals, directories, etc.)

information services. " [35]

Free and fee-based services are part of a controversial national information policy issue known as the public-private sector competition. We believe that competition is an unavoidable characteristic of a capitalist society, that has the quality to stimulate the economy and generated improved and enhanced [information] products (e.g. online commercial bibliographic databases as opposed to traditional manual indexes).

It is true to say that the public and private sectors are no more easily distinguishable, specially when public information services are compelled to purchase services from the private sector - within the constraints of diminishing federal funds - and sometimes provide fee-based services in order to respond to user needs [36]. There are different arguments favoring and opposing fee-based information services, but we aligned in the basic principle that information must be **available**, in all its forms, for users in general. Fortunately , nowadays the user still holds - at least in certain extent - the right to decide in whether or not to pay for information services. Public libraries are remaining to offer information sources to all and the private sector is filling the gaps (which have exist long before the establishment of fee-based information services) of information

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[35] James E. Freeman and Ruth M. Katz "Information Marketing" in Annual Review of Information Science and Technology, Vol 13, 1978, pp. 50-51

[36] Freeman & Katz, p. 51

provision, specially in the repackaging of information, online searching, etc.

## The new intermediary role: is a definition feasible?

There are differences and even controversy in the way information professionals see the intermediary role in today's information society. Some refer to information brokering as the umbrella term that mushrooms most of fee-based information services. Others set clear differences among what is known as information brokers, information consultants and information counselors. And finally, others see that the multidisciplinary nature of the field and the constant changes in today's information society difficult the challenge of defining a field without overlapping identified roles. The American Society for Information Science (ASIS) fits the information broker within the operation of information systems occupational area and the information consultant within the design of information systems. In describing information science careers, ASIS makes no explicit mention to the role of the information counselor [37].

## Types of fee-based information services

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[37] American Society for Information Science - Sharon Pyrce Kaminecki ed. Super Careers in Information Science. Washington DC, 1981

Types of fee-based information services can be determined by the extent to which they add value to information. Most of them are based on the repackaging of raw data, using information gathering techniques and what is known as the "value-added" information approach. In the context of added value, the manipulation of information by information analysis and evaluation, results in a output that has more value to users than the original input [38].

Within this scope, we identify two broad types of fee-based information services with additional subsets in within: information gathering services and value-added information services (engaged in information analysis and evaluation).

**Information Gathering Services** include: (1) **Document delivery** providing materials available in printed from, and making them accessible to the user faster the other traditional sources; (2) **On-line Searching** of published sources, using electronic databases to collect references; 3) **Extended Research or Full Service Research**, going beyond on-line searching and using expertise networks to contact clients with the person(s) that holds the answers to their quests.

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[38] Robert S. Taylor. Value-Added Processes in Information Systems. Norwood, NJ: Ablex, 1985
According to Taylor, value-added information is achieved by information analysis, which is the process necessary to produce, transmit, and present evaluated information to the point of use.

**Value-Added Information Services (Information Analysis and Evaluation)** include: (1) **Consulting firms**, providing advise to clients - or sponsor organizations - on the implication of their findings resulting from information gathering, analysis and evaluation; and (2) **Counseling services**, providing technical assistance, not only finding references but also helping and training users to use information in its different variations (e.g. databases, in-person techniques, etc.).

The lines between these services are not always so well designed, since they all tend to engage in several facets of the information industry. [39]

**Brief History of fee-based information services.**

It is considered that the first fee-based information service was SVP (S'il vous plait), a French company, established in Paris during the 1940s, providing fee-based answers to questions on all subjects to businesses and professionals. [40]

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[39] Terry Flynn "Information Brokers: Finding the Facts Business Needs" in Business America: The Magazine of International Trade. U.S. Department of Commerce. Vol 8, No.26 December 23, 1985, c2.

[40] Kelly Warnken. The Information Brokers. New York & London:R.R. Bowker Company, 1981, pp. 5-6

During the late 1960s an early 1970s, a number of individuals, mostly free-lance librarians, began operating small information brokering companies, as a response of a movement known as "alternatives to librarianship". The movement was in part inspired by the integration of on-line information retrieval in library schools curricula [41]. Some of first "information brokering" companies were:INFORMATION RESOURCES [1969], FIND [1971], INFORM [1972], INFORMATION ACCESS [1974], etc. [42]

A workshop entitled "The Information Broker/Freelance Librarian" held April 3, 1976 at Syracuse University School of Information Studies, brought together information specialists and students in the first formal professional attempt to define the new emerging role for the information professional [43]. One year later [1977], Kelly Warnken, of INFORMATION ALTERNATIVE, first published the Directory of Fee-Based Information Services, listing 87 known fee-based information companies in the United States and Canada [44].

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[41] Lorig Maranjian and Richard W. Boss. Fee-Based Information Services. New York & London:R.R. Bowker Company, 1980, pp 6-7

[42] Barbara B. Minor. Proceedings of the Information Broker/Free Lance Librarian --New Careers --New Library Services Workshop held at Drumlins, Syracuse, New York.Syracuse, NY: Syracuse University School of Information Studies, August 1976, p.1.

[43] Minor, p. 1-3

[44] Warnken, p. 5.

Companies that provide information for a fee continued to proliferate and in the early 1980s [1983], fee-based information services were composed by approximately 1153 firms. The industry grows at a rate of 16% per year, with revenues of $11 billion [45].

**End user online searching versus the intermediary role**

One of the major issues facing the industry of fee-based information services is the impact of end user searching, or, in other words, the growing public familiarity with electronic databases.

MISCHO & LEE define end users as the "information consumers", the patrons of libraries and information centers [46], those persons who end up using information (e.g. the student, the scholar, the businessman, etc.). In the other hand, intermediaries are those who retrieve information as a service to others (e.g. special librarians who conduct online searches for others, information brokers, etc.).

The searching of online databases by end users is also

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[45] Marchand & Horton, p. 40

[46] William H. Mischo & Jounghy Youn Lee. "End-User Searching of Bibliographic Databases" in Annual Review of Information Science and Technology (ARIST), Vol 22, 1987, p. 227

referred as "non-mediated searching" , "client searching" or "direct patron access to online bibliographic databases". Information science literature on this issue report a growing interest of end-users to access the wide range of online databases, and to get acquainted with new technology (e.g.optical disk technology also known as CD-ROM technology).

Does end-user searching represent a threat or help and promise to intermediaries (special librarians, information brokers, independent online searchers, etc.)? Most tend to agree that end-user searching does not really represent a threat to the intermediary role, but moreover, a stimulus to promote new intermediary roles, such advisory and consulting. Considering that the proliferation of databases generates a wealth of data (information overload) expertise skills will still be needed to filter and/or use available information. It is also believed that the "widening use of databases will acquaint users with the idea that they must pay for information" [47]

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[47] Flynn, c2.

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